

Mendel's law in violet hybrids.—BRAINERD³³ has given an interesting account of the offspring of supposed violet hybrids which show that certain characteristics behave according to MENDEL'S law. The characteristics observed were the color of the capsule, purple vs. green; and the color of seeds, brown vs. buff. The parents of his plants were supposed to be hybrids between *Viola hirsutula* and *V. papilionacea*. With respect to the two characters considered, the supposed hybrids should be di-hybrids. The number of F₂ offspring was only twenty-one, but all four of the possible combinations were present and the larger number showed the two dominant characteristics, purple capsules and brown seeds. Several F₃ families further demonstrated the Mendelian nature of these characteristics. The writer points out that Mendelian behavior in the offspring of the supposed hybrids demonstrates their hybrid character.—G. H. SHULL.

Age of Hepaticae.—CAMPBELL contends³⁴ that both the Hepaticae and Musci are old types, the perishability of their tissues and insufficient search accounting for the lack of known fossil remains. He finds in the wide distribution of certain genera of Marchantiales and Anacrogynae, and the cosmopolitan distribution of many of their species, evidence of the relative antiquity of the groups, since these plants are not adapted to rapid distribution. In proof of the latter he cites a few experiments, the character of the spores, and the fact that no Hepaticae have been found on Krakatau since the eruption, though Java with an abundant hepatic flora is in sight. Analogy from pteridophyte and spermatophyte distribution is adduced in support of this conception of the significance of bryophyte distribution. The weakness of the case is evident enough, but certainly it is as good as any, if one must speculate.—C. R. B.

Klinostats.—VAN HARREVELD finds³⁵ by chronographic tests that the klinostats in use at present are all defective in that they do not secure uniform rotation, especially when the axis of rotation is inclined or horizontal and the load is not exactly centered. The modern motor-driven forms are the least objectionable. This inequality of pace leads to definite and unexpectedly large geotropic responses and should therefore be eliminated. To obviate these difficulties, he has constructed an instrument upon new principles. It is driven by a weight automatically raised, and it is released under pendulum control by a ratchet actuated by an electromagnet. The intermittent shock of stopping is reduced by vanes and a wheel train. Photographs and drawings are given and a full description is promised when the instrument has been exhaustively tested.—C. R. B.

³³ BRAINERD, E., Mendel's law of dominance in the hybrids of *Viola*. *Rhodora* 9:211-216. *figs.* 2. 1907.

³⁴ CAMPBELL, D. H., On the distribution of the Hepaticae and its significance. *New Phytol.* 6:203-212. 1907.

³⁵ HARREVELD, PH. VAN, Die Unzulänglichkeit der heutigen Klinostaten für reizphysiologische Untersuchungen. *Recueil Trav. Bot. Néerl.* 3:173 ff. (pp. 144). *pls.* 3. 1907.